WHAT IS CLAIMED IS:

1. A use of a photocurable preceramic polymer to fabricate a silicon carbide containing ceramic or ceramic composite for the application of diesel particulate filters.

2. A use of a photocurable preceramic polymer to fabricate a silicon carbide containing ceramic or ceramic composite which is microwave susceptible.

3. A use of a photocurable preceramic polymer to fabricate a microwave susceptible silicon carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters.

4. A use of a photocurable preceramic polymer to fabricate a microwave susceptible silicon carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic

fibrils shaped in a corrugated cylindrical geometry.

5. A use of a photocurable preceramic polymer to fabricate a microwave susceptible silicon carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a conical geometry.

6. A use of a photocurable preceramic polymer to fabricate a silicon carbide containing ceramic or ceramic composite for the applications of radiant burners, thermal oxidizers of volatile organic compounds, filters, and automotive catalytic converters.

7. A use of a photocurable preceramic polymer to fabricate a boron carbide containing ceramic or ceramic composite for the application of diesel particulate filters.

8. A use of a photocurable preceramic polymer to fabricate a boron carbide containing ceramic or ceramic composite which is microwave susceptible.

9. The use of a photocurable preceramic polymer to fabricate a microwave susceptible boron carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters.

10. A use of a photocurable preceramic polymer to fabricate a microwave susceptible boron carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a corrugated cylindrical geometry.

11. The use of a photocurable preceramic polymer to fabricate a microwave susceptible boron carbide containing ceramic or ceramic composite for the application of

regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a conical geometry.

12. A use of a photocurable preceramic polymer to fabricate a boron carbide containing ceramic or ceramic composite for the applications of radiant burners, thermal oxidizers of volatile organic compounds, filters, and automotive catalytic converters.

13. A use of a photocurable preceramic polymer to fabricate a lithium aluminosilicate containing ceramic or ceramic composite for the application of diesel particulate filters.

14. A use of a photocurable preceramic polymer to fabricate a lithium aluminosilicate containing ceramic or ceramic composite which is microwave susceptible.

15. A use of a photocurable preceramic polymer to fabricate

a microwave susceptible lithium aluminosilicate containing ceramic or ceramic composite for the application of regenerative diesel particulate filters.

16. A use of a photocurable preceramic polymer to fabricate a microwave susceptible lithium aluminosilicate containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a corrugated cylindrical geometry.

17. The use of a photocurable preceramic polymer to fabricate a microwave susceptible lithium aluminosilicate containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a conical geometry.

18. A use of a photocurable preceramic polymer to fabricate lithium aluminosilicate containing ceramic or ceramic

composite for the applications of radiant burners, thermal oxidizers of volatile organic compounds (VOCs), filters, and automotive catalytic converters..

19. A use of a photocurable preceramic polymer to fabricate a silicon nitride containing ceramic or ceramic composite for the application of diesel particulate filters.

20. A use of a photocurable preceramic polymer to fabricate a silicon nitride containing ceramic or ceramic composite which is microwave susceptible.

21. The use of a photocurable preceramic polymer to fabricate a microwave susceptible silicon nitride containing ceramic or ceramic composite for the application of regenerative diesel particulate filters.

22. A use of a photocurable preceramic polymer to fabricate

a microwave susceptible silicon nitride containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a corrugated cylindrical geometry.

23. A use of a photocurable preceramic polymer to fabricate a microwave susceptible silicon nitride containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a conical geometry.

24. A use of a photocurable preceramic polymer to fabricate a silicon nitride containing ceramic or ceramic composite for the applications of radiant burners, thermal oxidizers of volatile organic compounds (VOCs), filters, and automotive catalytic converters.

25. A use of a preceramic polymer to fabricate a silicon

carbide containing ceramic or ceramic composite for the application of diesel particulate filters.

26. A use of a preceramic polymer to fabricate a silicon carbide containing ceramic or ceramic composite which is microwave susceptible.

27. A use of a preceramic polymer to fabricate a microwave susceptible silicon carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters.

28. A use of a preceramic polymer to fabricate a microwave susceptible silicon carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a corrugated cylindrical geometry.

29. The use of a preceramic polymer to fabricate a microwave susceptible silicon carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a conical geometry.

30. A use of a preceramic polymer to fabricate a silicon carbide containing ceramic or ceramic composite for the applications of radiant burners, thermal oxidizers of volatile organic compounds, filters, and automotive catalytic converters.

31. A use of a preceramic polymer to fabricate a boron carbide containing ceramic or ceramic composite for the application of diesel particulate filters.

32. A use of a preceramic polymer to fabricate a boron carbide containing ceramic or ceramic composite which is

microwave susceptible.

33. A use of a preceramic polymer to fabricate a microwave susceptible boron carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters.

34. A use of a preceramic polymer to fabricate a microwave susceptible boron carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a corrugated cylindrical geometry.

35. A use of a preceramic polymer to fabricate a microwave susceptible boron carbide containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a conical geometry.

36. A use of a preceramic polymer to fabricate a boron carbide containing ceramic or ceramic composite for the applications of radiant burners, thermal oxidizers of volatile organic compounds, filters, and automotive catalytic converters.

37. A use of a preceramic polymer to fabricate a lithium aluminosilicate containing ceramic or ceramic composite for the application of diesel particulate filters.

38. A use of a preceramic polymer to fabricate a lithium aluminosilicate containing ceramic or ceramic composite which is microwave susceptible.

39. A use of a preceramic polymer to fabricate a microwave susceptible lithium aluminosilicate containing ceramic or ceramic composite for the application of regenerative diesel particulate filters.

40. A use of a preceramic polymer to fabricate a microwave susceptible lithium aluminosilicate containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a corrugated cylindrical geometry.

41. A use of a preceramic polymer to fabricate a microwave susceptible lithium aluminosilicate containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a conical geometry.

42. A use of a preceramic polymer to fabricate a lithium aluminosilicate containing ceramic or ceramic composite for the applications of radiant burners, thermal oxidizers of volatile organic compounds, filters, and automotive catalytic converters.

43. A use of a preceramic polymer to fabricate a silicon

nitride containing ceramic or ceramic composite for the application of diesel particulate filters.

44. A use of a preceramic polymer to fabricate a silicon nitride containing ceramic or ceramic composite which is microwave susceptible.

45. A use of a preceramic polymer to fabricate a microwave susceptible silicon nitride containing ceramic or ceramic composite for the application of regenerative diesel particulate filters.

46. A use of a preceramic polymer to fabricate a microwave susceptible silicon nitride containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a corrugated cylindrical geometry.

47. A use of a preceramic polymer to fabricate a microwave susceptible silicon nitride containing ceramic or ceramic composite for the application of regenerative diesel particulate filters composed of matted ceramic fibrils shaped in a conical geometry.

48. A use of a preceramic polymer to fabricate a silicon nitride containing ceramic or ceramic composite for the applications of radiant burners, thermal oxidizers of volatile organic compounds, filters, and automotive catalytic converters.

49. A process of forming a photo-curable pre-ceramic polymer, poly(ethynyl)-carbosilane to silicon carbide ceramic comprising the steps of:

a. reacting sodium acetylide with organo-chlorosilanes; and

b. condensing (polymerizing) the resultant organo-

(ethynyl)chlorosilane product of step a with an excess of an alkali metal.